

AMENDMENT UNDER 37 C.F.R. § 1.111
U.S. Appl. No. 10/049,509

REMARKS

Claims 2-10, 12-18, and 25-39 are all the claims pending in the Application. By this Amendment, Applicant cancels claims 1 and 11. In addition, Applicant rewrites claims 3-5 and 12-14 into their respective independent forms. In addition, Applicant amends claims 3, 5, and 8 to further clarify the invention and claim 10 to include the allowable subject matter of claim 11.

Statement of Substance of the Interview

Applicant thanks the Examiner for the courteous personal interview on May 12, 2005. An Examiner's Interview Summary Record (PTO-413) was mailed to the Applicant on May 16, 2005. The PTO-413 requires the Applicant to file a Statement of Substance of the Interview. The Statement of Substance of the Interview is as follows:

During the interview independent claim 1 was discussed in view Umeno. The Examiner further clarified his position with respect to the "degree of slipperiness" as set forth in claim 1. The Examiner suggested amending claim 1 to further distinguish between the degree of slipperiness set forth in claim 1 and Umeno's frictional characteristics between the tire and the road surface.

Summary of the Office Action

The Examiner withdrew the previous rejections of claims 1, 3-5, and 8-11 under 35 U.S.C. § 102(b). In particular, the Examiner indicated that claims 2, 6, 7, 9, 16-18, and 25-39 are allowed and claims 4 and 11-15 contain allowable subject matter.

The Examiner, however, found new grounds for rejecting claims 1, 3, 5, 8, and 10. Specifically, claims 1, 3, and 8 stand rejected under 35 U.S.C. § 102(b) as being anticipated by

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U.S. Appln. No. 10/049,509

European Patent Application No. 891,904 to Umeno et al. (hereinafter "Umeno") and claims 5 and 10 as being obvious over Umeno.

Claim Rejections

The Examiner rejected claims 1, 3, and 8 under 35 U.S.C. § 102(b) as being allegedly anticipated by Umeno and claims 5 and 10 are rejected as being obvious over 35 U.S.C. § 103(a). Applicant respectfully traverses these rejections in view of the following comments.

Claim 1 has been canceled. Therefore, this rejection is moot with respect to claim 1.

Of the remaining rejected claims, claims 3, 5, 8, and 10 are all independent.

Claim 3 has been amended to recite, among a number of unique features: "a condition of the road surface on which the vehicle is running is estimated by comparing the calculated vibration level with a master curve which is a vibration level detected through running on a road having a predetermined condition of a road surface of the running vehicle."

Umeno teaches an apparatus for estimating a wheel condition in a wheel resonance system including a frictional characteristic between a tire and a road surface, a transfer characteristic of the wheel resonance system from the vibration input to the output response is expressed by a transfer function including, as an unknown component of a wheel condition, a physical quantity relating to ease of slipping between the tire and the road surface, an output response with respect to the vibration input to the wheel resonance system is detected and the unknown component which substantially satisfies the detected output response is estimated on the basis of the transfer function (see Abstract; page 2, lines 48 to 55). Umeno, however, does not teach or suggest estimating the condition of a road surface by comparing the calculated

AMENDMENT UNDER 37 C.F.R. § 1.111
U.S. Appl. No. 10/049,509

vibration value with a master curve. Umeno does not teach or suggest an estimation method of the condition of a road surface and that of the road surface on which the vehicle is running.

Therefore, "a condition of the road surface on which the vehicle is running is estimated by comparing the calculated vibration level with a master curve which is a vibration level detected through running on a road having a predetermined condition of a road surface of the running vehicle," as set forth in claim 3 is not disclosed or taught by Umeno, which lacks comparing the calculated vibration level with a master curve set forth in claim 3. For at least this exemplary reason, claim 3 is patentably distinguishable from (and is patentable over) Umeno. Therefore, it is appropriate and necessary for the Examiner to withdraw this rejection of claim 3.

Next, claim 5, as now amended, among a number of unique features, recites: "when vibration levels of at least two points of a portion below the spring with a buffer member interposed therebetween are detected to calculate a vibration transmission level of the portion below the spring between the two points at a predetermined frequency band and the condition of the road surface is estimated from the calculated vibration transmission level." Umeno formulates a transfer function through which the wheel speed vibration is output in response to the input from the surface of a road. Umeno fails to teach or suggest having a buffer member interposed between two points below the spring. In short, Umeno fails to teach or suggest the above-quoted features of claim 5.

Furthermore, independent claim 8 recite features similar to the features argued above with respect to claim 3. Since claim 8 contains features that are similar to the features argued above with respect to claim 3, those arguments are respectfully submitted to apply with equal

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U.S. Appl. No. 10/049,509

force here. Therefore, for at least analogous exemplary reasons, claim 8 is patentably distinguishable (and is patentable over) Umeno.

Finally, claim 10 has been amended to include the unique features of the dependent claim 11. The Examiner indicated that claim 11 contains allowable subject matter (see page 6 of the Office Action). Since claim 10 is equivalent to claim 11 rewritten in its independent form, claim 10 should be allowed.

Allowable Subject Matter

Claims 2, 6, 7, 9, 16-18, and 25-39 are allowed and claims 4 and 11-15 contain allowable subject matter. Applicant respectfully rewrites claims 4 and 12-14 into their respective independent forms. Accordingly, Applicant respectfully requests the Examiner to now allow claims 4 and 12-14. Claim 11 is now canceled and claim 15 is patentable at least by virtue of its dependency on claim 14.

New Claims

In order to provide more varied protection, Applicant adds claims 40 and 41. Claims 40 and 41 are patentable at least by virtue of their dependency on claims 3 and 8, respectively.


Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue, the Examiner is kindly requested to contact the undersigned attorney at the telephone number listed below.

AMENDMENT UNDER 37 C.F.R. § 1.111
U.S. Appl. No. 10/049,509

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